

**CHAPTER 6**  
**ALTERNATIVES**

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## **6. ALTERNATIVES**

### **6-1 OVERVIEW**

The "Alternatives Including the Proposed Action" is the section of a DEIS which discusses the alternatives studied for a proposed action. In an Environmental Assessment (EA) and a Preliminary Engineering Report (PER), this section is titled, "Alternatives Considered" and "Alternative Analysis" respectively. The content of each of these sections is the same, regardless of document type (as defined by 23 CFR 771 and T6640.8A). For that reason and for ease in understanding, the "Alternatives Including the Proposed Action," "Alternatives Considered," and "Alternative Analysis" sections will be called the Alternatives section for the remainder of this chapter.

The Alternatives section is the heart of the engineering and environmental document. This section should begin with a concise discussion of how the reasonable alternatives were selected for detailed study. Once this has been provided, the discussion should then describe those other alternatives that were identified and eliminated early in the project development process. The basis for their elimination should also be stated.

The Alternatives section, should provide a summary of the environmental impacts of each alternative and, at the end of the section, present a summation of the information on each alternative in comparative form by use of a matrix. All issues (needs) and substantial or significant impacts should be clearly defined and understood. This section must also demonstrate how the alternatives proposed respond to meeting the identified needs. It must also show how the proposed alternatives will enhance and/or adversely affect the human and natural environment. In this way, a clear basis for choice among alternatives (options) can be discerned and understood by the reader.

### **6-2 PROCEDURE**

The remainder of this chapter discusses the content of the Alternatives section and the rationale employed to enhance reader understanding.

#### **6-2.1 Standard Information in the Alternatives Section**

The Alternatives section must provide the following discussion in accordance with the Council on Environmental Quality (CEQ) Guidelines :

1. Rigorously explore and objectively evaluate all reasonable alternatives, and, for alternatives which are being eliminated from detailed study, briefly discuss the reasons for the elimination.
2. Devote substantial treatment in detail to each alternative considered including the proposed action so that reviewers may evaluate their comparative merits.
3. Include reasonable alternatives not within the jurisdiction of the lead agency.

4. Include the alternative of no action.
5. Identify the Department's preferred alternative(s) of all alternatives, if one or more exists, in the draft document and the final document unless another law prohibits the expression of such a preference.
6. Include appropriate mitigation measures not already included in (incorporated as a part of) the proposed action or the alternatives proposed.

Those projects that have a completed planning study (i.e. Master Plans, Action Plans, Corridor Designation Reports, Interchange Modification / Justification Reports, etc.) need to include the proposed alternative identified in the planning study as one of the alternatives considered. The level of analysis is substantially different between the planning and NEPA process, and consequently the results of the NEPA study may result in the selection of a different alternative. Where this is the case, the NEPA document will replace the planning study or will serve as an addendum to the planning study unless otherwise stated in the procedure used to develop the planning document.

Each reasonable and feasible alternative should be developed to a comparable level of detail in the DEIS, EA, and PER. The Alternatives section should provide a clear understanding of each alternative's termini, location, costs, and major design features (number of lanes, right-of-way requirements, median widths, etc.), and provide the reader with a general understanding of each alternative's effects on its surroundings or the community. Maps and other appropriate visual aids, such as photographs, drawings, or sketches, which would assist the reader in better understanding the various alternatives, impacts, and mitigation measures should be used as needed.

The amount of design details provided should be commensurate with the design information needed to define and evaluate environmental impacts or define right-of-way. In some instances, this could entail final design elements in the project.

The PER and environmental document should state that all alternatives are under consideration and that a final decision will be made only after the public hearing transcript and comments on the PER and environmental document have been evaluated.

In those situations where the Department has identified a preferred alternative based on its early coordination and environmental studies, the Department may so indicate in the DEIS, EA, and the draft PER.

The FEIS and the Final PER must identify the recommended alternative and discuss the basis for the selection.

The FONSI must identify the selected alternative. The discussion as to why the selection was made is found throughout the entire FONSI (Part 2, Chapter 3).

In discussing alternatives, the format for the Alternatives section should contain the following overall headings to aid the reader's understanding of the status of each alternative being discussed.

1. Alternatives Considered but Rejected
2. Alternatives Considered for Additional Study

Alternatives that were developed during Planning studies would be included in one of the two above mentioned categories. The alternatives evaluated during a Planning study would be reevaluated to insure that the initial evaluation is still valid. The findings of this reevaluation would be summarized in this section.

The alternative section generally discusses the following types of alternatives :

1. No-Action (No-Build)
2. Transportation System Management
3. Multimodal Alternatives
4. Construction Alternatives

In identifying and discussing alternatives, the analyst should take care to ensure that labeling each alternative is not a confusing task. Each alternative should be assigned a number (e.g., Alternative 1) and any option within that alternative designated by a lower case letter (e.g., Alternative 1a). If there exists suboptions (generally design typicals) within an option then these suboptions should be assigned subnumbers in parentheses (e.g., Alternative 1a (1)). If the project corridor is complex and segmented then each segment should be identified and each alternative discussed accordingly as prescribed above.

The following sections discuss the types of information usually contained in the Alternatives section. The analyst should always seek to ensure that the data presented clearly demonstrates the utility of each alternative under consideration in meeting the needs of the project and the community as identified in the Need section of the document (Part 2, Chapter 5).

### **6-2.2 No-Action Alternative**

The No-Action Alternative, which can also be termed the "Do Nothing" or "No-Build" alternative, often means precisely that -- doing nothing to the proposed project area. The No-Action alternative can also include those short-term minor reconstruction types of activities (safety improvements, minor widening, intersection improvements, etc.) which usually comprise a part of an on-going plan for the continued safe operation of the existing roadway system. Generally, these types of minor activities would be considered Categorical Exclusion (CE) type projects.

The No-Action Alternative section must describe the No-Action Alternative as conceived and define its effects on the surrounding human and natural environment. These effects can be both beneficial and adverse. Much of the discussion on impacts due to the No-Action Alternative must be closely interrelated to the discussion provided in the Purpose of and Need for Action section for an EIS, the Need section for an EA , and the Need for Improvement section of the PER. The likelihood or unlikelihood of the No-Action Alternative in meeting these problems, issues, and concerns must be fully provided. Finally, a statement must be provided that the No-Action Alternative will remain a viable alternative through the public hearing phase.

### **6-2.3 Transportation Systems Management Alternative**

The Transportation Systems Management (TSM) alternative includes those types of activities designed to maximize the utilization and efficiency of the present system. This limited construction alternative should be given appropriate consideration when major urbanized area construction activities are proposed. Possible subject areas to include in this alternative are options such as :

1. Fringe parking,
2. Ridesharing,
3. Traffic signal timing optimization,
4. High-occupancy vehicle (HOV) lanes on existing roadways and,
5. Access control.

The TSM alternative for the facility may have been previously addressed in a planning study, such as the Florida Intrastate Highway System (FIHS) Action Plan or Master Plan. The traffic signal optimization and access control elements of the TSM alternative may also have been addressed by a previously conducted Traffic Operations Study. If the TSM alternative has been analyzed in one of these reports, summarize the results in the PER and environmental documents.

On major highway projects in urbanized areas, the option of including and/or designating HOV lanes should be a consideration. Consideration of this alternative may be accomplished by reference to the regional transportation plan when that plan or the FIHS Action Plan or Master Plan considers this option. In the case of regional transportation plans or FIHS Action Plans or Master Plans that do not reflect consideration of this HOV option, it may be necessary to evaluate the feasibility of this alternative.

Whenever TSM is a reasonable alternative, the effects of reducing the scale of a connecting link in the regional transportation plan will have on the remainder of the system must be discussed during the evaluation of the HOV alternative.

While TSM primarily relates to major projects in urbanized areas, the concept of achieving maximum utilization is equally important in rural areas. Before major projects on new location are proposed, it is important to demonstrate that reconstruction and rehabilitation of the existing system will not adequately correct the deficiencies identified in the Need discussion.

#### **6-2.4 Multimodal Alternatives**

This section must discuss all other proposed alternative modes of transportation (construction alternatives) including those reasonable and feasible alternatives (i.e., mass and rapid transit options and non-motorized vehicle options) which may not be within the existing funding authority of FHWA. Some urban projects, due to their complexity, may be multimodal, thus requiring close coordination with the Federal Transit Administration (FTA).

For multimodal projects or projects where the potential exists for multimodal options, FTA should be consulted early in the project development process. Depending on the extent of FTA involvement and the possible use of FTA funds for portions of the proposal, the need to request FTA to be a lead agency or cooperating agency should be considered at the earliest stages of project development. The need for FTA coordination should be established through consultation with FHWA. Where applicable, cost-effectiveness studies that have been performed should be summarized in the PER and environmental documents.

For non-motorized modes, this section must evaluate the types of non-motorized facilities required to meet the need as defined in the need section of the PER and environmental documents. This evaluation must determine what types of facilities should be constructed consistent with local plans and the cost factors (monetary and environmental) involved in meeting the local needs as defined by local interests and the approved County bicycle plan or bicycle element (non-motorized mode) of the comprehensive plan. This evaluation would include full consideration of pedestrians regarding trip and recreation activities (Part 2, Chapter 14).

#### **6-2.5 Florida Intrastate Highway Systems (FIHS) Alternatives**

Detailed corridor plans have been developed for most FIHS facilities. Corridor plans on limited access facilities are referred to as Master Plans. Corridor plans on controlled access facilities are referred to as Action Plans.

FIHS corridor plans are oriented to reaching general agreement on a preferred design concept and scope to be implemented for the corridor. The FIHS plans have been developed with a significant amount of public involvement including elected officials, business interests, interested citizens, and advocacy groups.

Typically, the FIHS corridor plan will define the preferred corridor alternative, and will perform a fatal flaw, or order of magnitude environmental evaluation. During the PD&E phase this alternative is further refined and a more detailed environmental analysis is completed. Generally, no further corridor level analysis would be necessary during the PD&E phase. However, in the event that

conditions have changed requiring a departure from the alternative identified in the FIHS corridor plan, the project manager will coordinate with the planning office and the corridor management team with regards to the preferred alternative. When this happens the PER and the environmental document will serve as an addendum to the approved FIHS corridor plan.

## **6-2.6 Construction Alternatives**

The Construction Alternatives section must address solving the transportation problems identified in the Need Sections of the PER and environmental documents. The solutions proposed must strive to solve the problems set out in the Needs discussion. If the proposed solutions cannot feasibly be accomplished due to corridor constraints then this must be clearly demonstrated in this section. Where the Level of Service Standards, cannot be provided, consultation with FHWA on the alternatives being proposed must take place. Justification for providing a facility which will not adequately meet the needs of the community in the future must be documented in writing and fully concurred with by FHWA prior to proceeding with development of the draft document. In this way, an alternative will not be developed and project funds expended on an alternative that would not qualify for Federal funding. This justification and documentation should also be shown in the PER (Part 1, Chapter 9).

In seeking to solve the transportation problems and meet the associated community needs, the search for corridors, alignments, and alternatives must be identified in the Alternatives for further study. Those which have been studied but eliminated should be justifiably dismissed. The rationale for dropping the corridors, alignments, and alternatives should be documented adequately in the PER (Part 1, Chapter 9) and the project file. The evaluation should provide a good description of the corridors, alignments, and alternatives studied and the rationale why they are not feasible or reasonable. This includes defining where alignments could potentially be developed and the social, economic, and environmental consequences which would make such development unreasonable. A general discussion of these can then be provided in the environmental document.

The Construction Alternatives section should provide the following information :

1. Provide a project location map or reference the same. This is usually located at the front of the PER and, in addition to locating the project, it should provide a good overview of the major natural features, the community, and any major social and economic generators in the project area.
2. Provide a map(s) showing the project corridor and the alternative alignments.
3. Provide all the preliminary design concepts under consideration for both roadway and bridge elements of each alternative. This includes :
  - a. Overall project length; and if project is segmented, the segment lengths.
  - b. Describe existing facility (i.e., right-of-way width, lanes, median, etc.) as relates to the proposed action.

- c. Present capacity and level of service.
  - d. Future capacity and level of service per alternative.
  - e. Maintenance of traffic.
  - f. Access management criteria, and the rationale per alternative.
  - g. Describe per segment all major intersection improvements.
  - h. Include typical sections with each segment discussion (if typical is common throughout a large portion of the project, then reference it in all applicable segments).
  - i. Provide AADTs for opening year interim year and 20- year traffic and future capacity and level of service per alternative. This information may be referenced since it is generally found in the need or traffic section of a document.
  - j. Supplemental routes, which are proposed to help meet the need of a constrained corridor, should be described in detail as specified herein.
  - k. Discuss all non-motorized facilities (pedestrian and bicycle).
5. Discuss right-of-way involvement for each alternative under consideration. This includes drainage and retention area needs and temporary construction easements.
  6. Describe how the type of facility proposed for each alternative under consideration addresses the needs (problems) identified in the Needs discussion. For bridge structures, briefly reiterate the deficiencies of the structures, as described in the needs portion of the document (i.e., number of openings, vertical and horizontal clearances, state of repair, rating, maintenance, level of service, U.S. Coast Guard involvement) and discuss how the proposed improvements will solve the problems and deficiencies identified.
  7. Describe the advantages and disadvantages of each alternative. Discussion must include, but not be limited to :
    - a. Cost of each alternative (including engineering, right of way, relocation, mitigation and construction);
    - b. Discuss right-of-way involvement for each alternative under consideration. This includes drainage and retention area needs and all easements;
    - c. Number of relocations per alternative;
    - d. Relationship of project to any special, unique, or significant natural, historic, etc., features (i.e., landmarks, homes, properties, etc.);



- e. Potential for Section 4(f) per alternative;
  - f. Describe per alternative any unique community needs or situations which will be served, enhanced, or impacted;
  - g. State whether alternatives presented are consistent with the cost-feasible plan for the County; and
  - h. Summarize for each alternatives the environmental impacts.
8. Provide, at the end of the “Alternatives Considered” or “Alternatives Section,” a matrix which provides a summary evaluation of each alternative considered.

### 6-3 REFERENCES

1. Council on Environmental Quality, Executive Office of the President, 1978. Regulations For Implementing The Procedural Provisions Of The National Environmental Policy Act. Reprint 43 FR 55978-56007, 40 CFR Part 1500-1508.
2. Federal Register, August 28, 1987. Environmental Impact and Related Procedures. FR Vol. 52, No. 167.
3. U.S. Department of Transportation, Federal Highway Administration, October 30, 1987. Guidance for Preparing and Processing Environmental and Section 4(f) Documents, FHWA Technical Advisory T6640.8A.
4. FHWA Letter Dated December 18, 1986, from James E. St. Johns, Assistant Division Administrator to William F. Ventry, Deputy Assistant Secretary titled "Environmental Studies - Alternatives."
5. Topic No. 525-030-250, Development of the Florida Intrastate Highway System, September 15, 1998